1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

304 the operation, was compelled to rest and recuperate, the bodies of the youths who were assisting at the rite were tattooed gratis by the *tuhuna*. [784] Everyone in the tattooing house was *tapu*, being restricted from any contact with outsiders, particularly with women. There were certain food restrictions for the *opou*, the object of which appears to have been to lessen the inflammation and fever resulting from the operation.

The youth was held by assistants of the *tuhuna patu tiki*, who outlined the designs with charcoal. These outlined designs the *tuhuna* himself sometimes filled in; but at other times he would leave that part of the [386] work to his assistants or apprentices. The pigment used was made by mixing soot from the smoke of burnt candlenut kernels with water or cocoanut oil. The whole process of making the pigment, which was prepared in advance by the father of the boy, was very *tapu*. The implements of the [413] *tuhuna* consisted of a set of small bone instruments with fine saw-teeth at one end, which were inserted in a piece of reed stem or bamboo to serve as a handle, and a small baton held in the right hand, which was used to [533 755] tap the instrument. As the tattooer worked, he accompanied the rhythm of his tapping with a chant which was supposed to lessen the pain for the boy. (For examples of design see fig. 11, and Pl. II, c.)

[553] At the time of these rites the *ka'ioi* youths who were undergoing the operation with the *opou* always gave him a nickname which was known as the *pati'i*. These nicknames always referred to some personal peculiarity of the boy himself, or of his parents. The final completion of the tattooing was celebrated with a feast (see Festivals) at which the newly tattooed youths exhibited the beauty of their new designs.

Girls were tattooed betwen the ages of seven and twelve, in a small house erected for the purpose, the work being done simply, with less elaborate rites and without the participation of the *ka'ioi*.

MARRIAGE AND RELATIONSHIP BETWEEN THE SEXES

836 The freedom between the sexes during the years immediately following adolescence has been described in detail. (See The Tribe—Ka'ioi.) Porter says (24, p. 113):

> Before marriage they [unmarried girls] are at liberty to indulge themselves with whom they please, but after marriage the right of disposing of them remains with the husband.

583 848 The transition from the period of *ka'ioi* freedom to permanent relationship with one of the other sex appears to have come either as a result of the birth of a child to a girl or young woman, in which case she and the child's father came together and lived as *ahana* and *vehine*, merely

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IMPLEMENTS FOR COLLECTING AND PREPARING BREADFRUIT

Breadfruit is still the Marquesan staple, and utensils for collecting and preparing it form part of the equipment of every family. These utensils may be divided into two classes, those used in collecting and transporting the fruit, and those used in preparing it for food.

NETS AND CARRYING STICKS

Breadfruit nets are of two sorts, small picking nets and large carrying nets. The picking net consists of shaft and head.

The shaft is a long straight pole of some light wood, usually fau. The head consists of a net woven on a forked stick, one foot to 18 inches long. The fork is tied to the shaft and is bent backward so that it stands almost at right angles to the shaft. The wood of a tough vine is usually used for the fork, the angle being given by bending the wood while green and tying the prongs back to the shaft until the wood dries. Within the fork, which is six to eight inches long, a small net is woven having a depth of eight inches to one foot. Commercial string is used for these nets, replacing the sennit of former times. The mesh of the net is large and the knot is like an European square knot. In use, the picker is lifted until the fruit is enclosed in the net; the stem is then caught in the angle of the fork and broken by a slight twist. The fruit are usually picked one at a time and transferred from the picking net to the carrying net, which is hung in the trees near the picker. The average carrying net is about 18 inches in diameter and three feet deep. This net (Pl. LVII, *A*) is also usually made of commercial cord, although sennit is still used. The top of the net is held open by a hoop made from a sapling about three-fourths of an inch in diameter, which has been steamed in an earth oven until it is pliable, bent until the ends overlap, and the juncture covered with many laps of cord. The net is suspended from the carrying stick by three ropes of twisted bark, woven together in the center to form a loop, the ends of ropes being tied to the hoop at equal intervals. The bottom of the net is finished with a ring about two inches in diameter made from two strands of sennit. About this ring the bottom strands of the net are passed in closely spaced double half hitches.

Carrying sticks (for transporting the fruit to the house) are simply poles one and a half to two inches in diameter cut from the nearest clump of fau. In ancient times, more carefully made carrying sticks are said to have been used; smoothly finished, and with notches at either end protected by a raised flange. No specimens were seen, and it is probable that even then ordinary carrying sticks were nothing more than saplings.

IMPLEMENTS FOR PREPARING BREADFRUIT

The implements used in preparing breadfruit vary according to whether the fruit is to be made into *ma* and stored, or is to be eaten at once. In *ma* making large numbers of the fruit are gathered and piled up to ripen. The ripening is hastened by piercing each fruit at the stem end with a pointed stick (Pl. LVII, *D*) or with a piece of crushed bamboo. When the bamboo is used, it is broken off at the surface each time, leaving a fragment of the bamboo in the fruit.

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A special tool (Pl. LVII, *C*) made from the shell of a cowrie (*Cypraea mauritiana*) is used for peeling the ripened fruit. 413 252

An oval hole with sharp edges is ground through the rounded end of the shell. At the opposite end the top is broken away, the base of the shell and a strip across the center being left intact. When in use, the shell is held in the hand transversely, with the base against the palm and the sharp edge toward the outer side of the hand. It is moved downward and away from the body. The peelings cut off by the sharp edge pass through the shell and fall out at the rear aperture like the shavings from a plane. These peelers are remarkably rapid and effective, superior to any European tool for peeling breadfruit.

It is interesting that an identical tool is used in Kuschai, in the Carolines, although it is not reported from other parts of Micronesia. It is impossible to outline the Polynesian distribution of this tool. It was used in the Society Islands, but not in Hawaii, and seems to be absent in Tonga. [171]

When properly ripe, the breadfruit are soft enough for the raw pulp to be easily separated from the core with the fingers. Slightly unripe fruits are sometimes cut up for *ma* making. In ancient times this was probably done with a wooden breadfruit splitter. An implement of this sort in the Bishop Museum is eight inches long, with a maximum width of four inches. (See Pl. LVII, *B*.) It has a long oval blade terminating in a broad flat knob. Only the outer end of the blade is sharpened. It is made of some rather hard, light weight wood.

Fresh breadfruit are roasted on an open fire, the proper moment for removing them being determined by the sound they give when tapped with a stick. They are lifted from the fire with two sticks, or, in well equipped households, with tongs. 252 412

These tongs are made from a single straight piece of wood, preferably *mio*, about 2½ inches in diameter and 3 to 4 feet long. The wood is split for the lower two-thirds of its length and the ends spread apart. A few turns of fau bark are usually tied around the upper part of the stick to keep it from splitting in two. Tongs of this sort are also used to arrange the hot stones used in the earth oven, or *umu*. [824]

The charred outer surface of the breadfruit is removed with a knife of wood or bone. Most of the wooden knives appear to have been simple sticks with one end fashioned into a thin blade. Any wood, even that of the fau, might be used. (See Pl. LVII, *E*.) The bone knives are more carefully made (Pl. LVII, *F*.) As all those seen were shaped from the leg bones of cattle it seems doubtful that the type is an ancient one.

The upper end is squared and rubbed smooth, the natural swell of the bone at the joint giving the handle a slightly expanded butt. The blade is formed by grinding away one side of the shaft. The average knife is 9 inches long, with a blade length of 4 inches. The blade is 1½ inches wide at the base, tapering toward a broad rounded point.

After peeling, the breadfruit is dropped into the *popoi* trough, cored, and beaten into a paste with the *popoi* pounder.

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CLOTHING AND ORNAMENTS

The climate of the Marquesas is such that clothing is unnecessary as a protection from the cold. The original native dress was a scant costume of tapa. Mats seem also to have been worn but their use was exceptional. The only mention of this custom is by Krusenstern (34, p. 156) who, speaking of the people of Nuku Hiva, says,

> Mats are sometimes used among them, and the king's son-in-law, though indeed he was the only person, always came to the ship in one of a very coarse kind, and fastened under the chin in such a manner as to merely cover the back.

In Hiva Oa the natives seem to have no memory of the use of mats as clothing and in view of the tapu which existed on that island against the use by men of mats other than those made of coconut, it seems doubtful that they ever were worn. This tapu was so strong that in former times straw hats which were considered a kind of mat could not be placed on the head without sacrilege.

TAPA

Tapa was made from the bark of several different trees. The most important is the *ute* or paper mulberry (*Broussonetia papyrifera* or *Morus papyrifera*) which yielded a soft white tapa. An inferior greyish tapa was made from the bark of the breadfruit tree, and a strong, mahogany colored tapa, much used in ceremonial costumes, was made from the bark of a species of banyan (*Ficus Sp.*). Jardin (33, pp. 32-59) says that the bark of the *mio* (*Thespesia populnea*) and the *katea* (Alyxia) were also used to a small extent.

The paper mulberry was essentially a cultivated plant, and was probably introduced by the early settlers. It was planted in fenced enclosures and carefully tended. The breadfruit and banyan do not seem to have been grown specially for tapa making, the bark being obtained from shoots and small limbs. A special form of *ute* tapa, made from the bark of an old tree, was worn as part of a priest's ceremonial costume.

IMPLEMENTS USED IN MAKING TAPA

The implements used by the Marquesans in making tapa were scrapers, beaters and anvils.

Scrapers

The scrapers used in the manufacture of tapa were made from pearl shells, rarely more than four inches across, whose edges were ground sharp. In some scrapers the irregularities of the hinge were also ground away to make the implement more convenient to hold, but the natural outlines of the shell seem always to have been retained. They must have formerly been very numer-

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287 413 ous, for fragments of scrapers may be found in the earth of any village site. A few stone scrapers designed for other purposes may also have been used in tapa making.

BEATERS

The tapa beaters in common use were of two distinct types, the round and the square. There was a third rare type which was intermediate between the two main forms.

The round beaters (Pl. LXXIV, *A*, 3) are simple billets of fau wood, 18 to 20 inches long, cut from saplings 1½ to 2¼ inches in diameter. These billets were stripped of bark, and while still green and soft, were incised from end to end with a number of closely spaced grooves made, it is said, with the corner of a stone adz. They were then allowed to dry, and were ready for use. Beaters of this type have no distinct handles and both ends and all sides may be used. The round beaters were commonly used only for the initial beating of the bark, but could be employed for the entire process of manufacture. A very fine piece of *ute* tapa was seen that had been beaten throughout with an implement of this sort.

The square tapa beaters (Pl. LXXIV, *A*, 1) were made of toa wood (Casuirina) and their manufacture must have required considerable skill and patience. Their handles are said to have been shaped with shells and the grooves cut with sharpened pearl shells or rats' teeth. Beaters of this type were common to the whole of Polynesia, but those from the Marquesas are easily distinguishable by their shorter and heavier grips. The body of the beater is rectangular; the grip is round and nearly as thick as the body. There is a slight flare at the butt of some beaters. Each of the faces is incised with a number of closely spaced longitudinal grooves. The number of grooves on the different faces of a beater varies slightly, but there seems to be no distinction of coarse and fine faces such as is found in the Tahitian and some other beaters. The ornamental designs on beaters which gave the tapa a sort of "water mark," common in Hawaii, seem to have been entirely absent in the Marquesas. A beater with a long slender grip, reminiscent of the Hawaiian and Tahitian forms, was seen in Hiva Oa, and another obtained from an old *me'ae* on the same island, has the grip set at a slight but distinct angle to the body of the beater, a very unusual feature.

Beaters of the third type constitute an ancient form. (See Pl. LXXIV, *A*, 2.) Only two were seen, both of them crudely made. They are made of *toa* wood, are rectangular in cross section, but somewhat more slender than the ordinary square beaters and have no distinct handles. All four faces are grooved for their entire length, but the grooves appear to have been drawn alternately from

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opposite ends, as some of them overlap slightly in the center of the implement. It seems probable that this form is a hybrid, combining the continuous grooves of the round beaters with the flat surfaces of the square type.

Tapa Anvils

The Marquesans employed anvils of both stone and wood. Stone anvils are now little used, but in former times they appear to have been part of the equipment of every household. In early times they were used for only the preliminary beating, but later were occasionally employed for the entire manufacture.

In its simplest form the stone anvil is nothing more than a large flat water-worn bowlder, but most anvils seen have been carefully worked from large blocks of stone. They are rectangular, with a length of from 18 inches to 2 feet, 6 inches; a width of from 8 inches to one foot, and a thickness from 4 to 7 inches. The tops have been carefully flattened and smoothed, the sides made vertical or nearly so. The bottom is usually left rough. Some anvils are widest in the middle, tapering evenly toward either end. An especially fine specimen from Pua Ma'u, Hiva Oa (Pl. LXXIV, *B*) has a longitudinal groove along either side for a short distance below the top and is remarkable in having the bottom more or less hollowed—a feature which may have resulted from its use as a whetstone for stone adzes. These carefully made stone anvils are of considerable interest, as they do not seem to have been used in any other part of Oceania.

Wooden anvils are still used in the manufacture of tapa. The only one seen was made of breadfruit wood, rectangular in cross section, and was approximately two feet long, ten inches wide, and six inches thick. This anvil differs in form from those described by aged informants, and possibly is of a modern and degenerate type. In former times two types of wooden anvils appear to have been employed. The simpler of these was a long straight log, preferably of breadfruit wood, smoothed but not otherwise prepared. The more elaborate type was made from a light colored wood, possibly a species of sandal wood, obtained on the plateau. It was U-shaped in cross section, with straight ends. Its hollowed interior made it more easily portable and increased its resonance so that the sound of cloth beating could be heard for a long distance.

Tapa Making

The paper mulberry, from whose bark the best grade of tapa was made, was raised in regular plantations. Handy was informed that dead trees 18 to 20 feet high were cut down and stripped of their bark, that the bark was then soaked, and finally beaten to remove the inner skin. A local informant said that live shoots 10 to 12 feet high were cut and barked while still green, and described the process of tapa making as follows:

The fresh bark was taken to a stream, where the coarse outer bark was removed with a shell scraper. The bark was not soaked before the initial beating, a point which was stressed by the informant who was familiar with both the Hawaiian and Marquesan processes of tapa making. The bark was beaten on a stone anvil with a round beater until it was similar to

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be worn with the knot either on the breast or on one shoulder. According to Handy the festive dress of the women consisted of a strip of tapa as much as thirty or forty meters long which was wrapped round and round the wearer, giving an effect not unlike an European hoop skirt. In some cases it was doubled and plaited around a hoop which hung from the hips. This custom of wearing great quantities of tapa has also been described from Hawaii and the Society Islands. It is rather interesting that the poncho-like upper garment worn in the Society Islands seems to have been unknown in the Marquesas.

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TATTOOING

The Marquesans surpassed all other Polynesians in the excellence and extent of their tattooing. In men the entire person, even to the crown of the head, was covered with intricate and beautiful designs. Women were tattooed on the arms, legs and shoulders, but not on the body. The facial tattooing of women was limited to a series of short lines on the lips and a small figure behind the lobe of the ear. The present natives deny that the genitals were tattooed, but a drawing in the prospectus of Von den Steinen's book on Marquesan art indicates that this was sometimes done on women.

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The tattooing was done with bone combs.

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The larger combs were made from the bones of revenge victims, *heana*, the smaller combs of bird bones. In Hiva Oa at least smaller tattooing combs were made from the bones of tapu birds caught on Fatu Huku. The combs are roughly triangular in outline, with rounded apexes and slightly convex edges. Unfinished specimens show that they were shaped and ground to a sharp edge before the teeth were cut. The cutting of the teeth is said to have been done with a sliver of bamboo. The largest comb collected is about 3 inches long and ½ inch wide at the base, with a maximum width of about ½ inch, and a thickness of 1/16th of an inch. The smallest, made of bird bone, is about 2½ inches long, with a base width of 1/10 of an inch and a maximum width of about 1/5 of an inch. The teeth range in length from 1/8 to 1/5 of an inch and vary in number from 3 to 18, according to the width of the comb. The lower edge of several of the combs is convex rather than straight so that the incisions made must have been deepest in the middle. This is not a constant feature and was probably accidental. The larger combs were used to fill solid space in the designs, the smaller, in working out curves and details. (See Pl. LXXV, *A*, 2.)

According to informants in Hiva Oa, the combs were provided with temporary handles made from joints of upland reed, in which small transverse slots were cut for the insertion of the upper end of the comb. When not in use the handles were discarded and the combs stored in short joints of bamboo (Pl. LXXV, *A*, 3). The complete implement looked like a miniature adz from four to six inches long. In Nuka Hiva a more permanent form of handle seems to have been used, the blade being attached by ornamental lashings of very thin sennit.

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The pigment used in tattooing was made from soot or from pulverized charcoal, mixed with water to form a thick ink.

In making the soot pigment, which was considered the best, a flat water-worn stone was propped up on three other stones in such a way as to leave a small space beneath it. Three strings of candle nuts, strung on sennit, were then tied together in a bunch, lit, and thrust under

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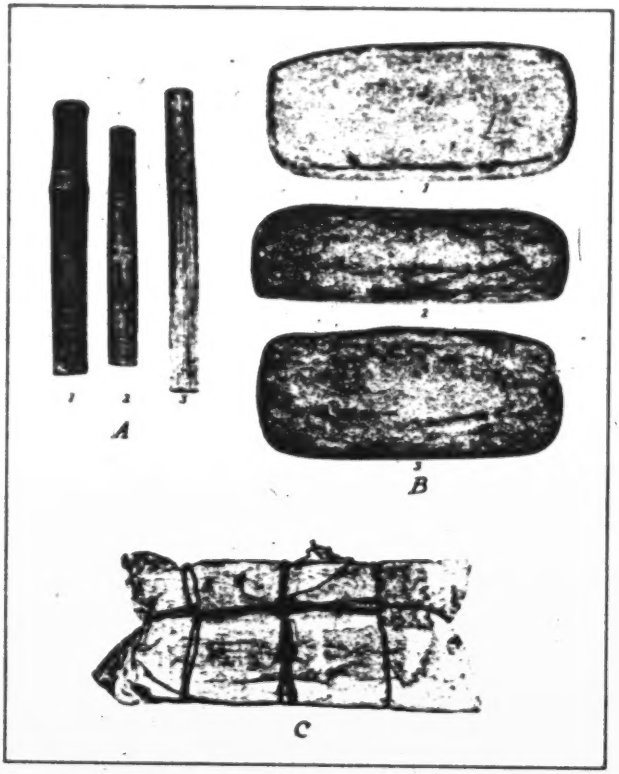

TOOLS FOR TAPA MAKING: *A*, TAPA BEATERS—(1) SQUARE WITH HANDLE, (2) SQUARE WITHOUT HANDLE, (3) ROUND: *B*, STONE TAPA ANVIL—(1) TOP VIEW, (2) SIDE VIEW, (3) BOTTOM VIEW; *C*, BUNDLE OF FINISHED TAPA.

[end plate 35]

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Before the coming of the *tuhuna*, the father of the *opou* had prepared the pigment *(hinu)*. The preparation of this was a very *tapu* operation, the man making it being forbidden all relationship with women during the period; and, according to Lesson (1, p. 107-108), it was necessary for a virgin to aid him in the work. The shells of the *ama* nut *(Aleurites triloba)* were heated so as to open easily (7, p. 45), and the kernels placed over a fire in a kind of pocket of stones which allowed the smoke to ascend through a small passageway in order to collect on a smooth stone *(pa'e hinu)*. Upon this stone a constant tapping was kept up while the soot collected to the depth of about an inch. This process, according to Berchon, was called *amahi ama*. The soot-covered *pa'e hinu* was then placed on a banana leaf and left in the sun to dry, being kept thus until the *tuhuna* arrived for his work. Thereupon, the father, according to present-day information, mixed the soot with plain water in a small coconut shell *(ipu hinu)* and gave it to the artist. Marchand Langsdorff, and Porter agree upon water as the solvent; but Berchon further reports that the ink, which he calls *kaahi*, was made by mixing the soot with coconut oil; while Melville (13, p. 246) gives vegetable juice as the liquid. He and Langsdorff describe the use of the ashes, rather than the soot, of this nut kernel, and Porter thought burnt and powdered coconut shell was used, but apparently no other pigment save carbon was ever employed in the Marquesas, as all early voyagers remark only the dark blue or blackish coloring. (See 15, p. 16; 14, p. 78; 10, p. 118; 8, p. 155; 13, p. 158). Jardin (7) speaks of carbonizing and pulverizing the kernels of the *ama* and mixing the powder with water to trace the designs on the body, and it may be that the residue of the burnt nuts was so used.

When the *tuhuna* arrived, bringing his instruments in a bamboo case seven or eight inches long *(pukohe fau hinu)*, stoppered with a wad of tapa, he spread them out upon a piece of tapa on the ground, ready for use. The instrument is generally known as *ta* (to strike), but Berchon (1, p. 110) gives the following nomenclature for its various parts: *ta'a* (a point) for the toothed end, *kakaho* (reed or cane) for the horizontal support of the teeth, and *ta-tiki* (strike-*tiki*) for the baton (Berchon, p. 110). There was always an assortment of these toothed ends of varying fineness or coarseness appropriate for all grades of work from the delicate hair lines to solid patches. The flat instruments for straight lines and gradual curves were of human bone, sometimes of the bones of enemy sacrifices *(ivi heana)*. They were about three inches long, flat and slightly wedge-shaped, and toothed or comblike at the end. Instruments for the smaller curves were of the bones of the *kena (Sula piscatrix)*,

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or of a *tapu* bird on the small island of Fatu Uku, the leg bones having been used (at least they are used for the instruments seen today), and according to Langsdorff, wing bones also. Marchand describes these *ta* as sometimes of tortoise-shell; Berchon adds, of fish bone; and Melville mentions sharks' teeth: but no trace of combs other than of human or bird bone remains today. The number of teeth varied from three to about twenty—Melville saw some with a single fine point—according to the size and use of the instrument. Melville says that some had points disposed in small figures, so that the whole design was printed at a single blow.

These bone combs were inserted into a slit in a piece of reed stalk, bamboo (10, p. 118), or ironwood (11, p. 110; 1, p. 109), six or seven inches long, which acted as a horizontal handle (see, however, 12, p. 51, note), held, while in use, in the left hand of the *tuhuna*. This was, as far as could be ascertained today, straight, though Melville speaks of curved ones. The baton, about three quarters of an inch thick and from a foot to eighteen inches long, was of hibiscus wood.

Although everything connected with the operation itself was extremely *tapu*, tattooers in general, in Nuku Hiva at least, being under the auspices of the god Hamatakee (2), Tahu being the god of the *tuhuna* and the *ka'ioi*, Pupuke of the *ou'a*, yet there are no records of opening ceremonies. The patient, clad only in a girdle, was simply laid upon the floor, arms and legs held by four *ou'a*. When a design had been sketched in charcoal upon the body, the *tuhuna*, or an assistant, held in his left hand the toothed hammer and a piece of tapa, with which by a dextrous twist of this hand he wiped away the blood as it flowed from the punctures made in the skin by the gentle tapping on the top of the comb with the baton held in the right hand. As he worked, he kept a sufficient supply of pigment upon the teeth by dipping two fingers of his right hand into the ink and rubbing them upon the comb. Garcia, Marchand, and Berchon agree with this procedure; but Langsdorff and Krusenstern declare that the punctures were made in the skin until the blood oozed out and then the dye was rubbed in. While the tapping went on, the operator chanted in rhythm to his strokes the following words to allay the pain of the *opou*:

Ua tuki-e, ua tuki-e, ua tuki-e,	It is struck, it is struck, it is struck,
Ua tuki-a, to tiki-e,	It is struck, your design,
Poparara[a] to tiki-e,	Tap-tapping your design,
O te tunane o te kui-a,	The brother of the mother,
O te tuehine o te kui-a,	The sister of the mother,
To'u tiki-e.	My design.

[a] Poparara is onomatopoetic, the sound of tapping.